Patent claims

1. A Coriolis mass flowmeter, with at least one pipe (9) through which the mass flows, which pipe can be made by an excitation unit (8) to undergo mechanical vibration as an oscillating element, the oscillating behavior of which, changing in dependence on the mass flow, can be sensed by means of at least one sensor (15, 16) for determining the mass flow, characterized in that, to determine the current state of wear of the pipe (9), the excitation unit (8) imparts a single oscillatory pulse to the pipe (9), the oscillatory response of which is sensed by means of the at least one sensor (15; 16) and used by a downstream evaluation unit (10) as a basis for calculating the current damping constant of the pipe (9) and comparing this with a stored, original damping constant of the pipe (9) when it was new.

2. The Coriolis mass flowmeter as claimed in claim 1, characterized in that there is a mass flow when the single oscillatory pulse is imparted to the pipe (9) by the excitation unit (8), but this can be computationally eliminated by the evaluation unit (10) to determine the individual damping constant of the pipe (9).

3. The Coriolis mass flowmeter as claimed in claim 1, characterized in that a mass flow is not taking place when the single oscillatory pulse is imparted to the pipe (9) by the excitation unit (8).

4. The Coriolis mass flowmeter as claimed in one of the preceding claims, characterized in that at least one excitation aid (7), which is formed as a ferromagnetic body, is attached to the magnetically

neutral pipe (9) and can be used by the excitation unit (8) for making the pipe (9) vibrate.

5. The Coriolis mass flowmeter as claimed in claim 4, characterized in that the magnetically neutral pipe (9) consists of a ceramic material.

6. The Coriolis mass flowmeter as claimed in claim 4, characterized in that the magnetically neutral pipe (9) consists of a plastic.

7. A method for operating a Coriolis mass flowmeter as claimed in one of the preceding claims, characterized in that, to determine the current state of wear of the pipe (9), the latter is excited by the excitation unit (8) with a single oscillatory pulse, after which the oscillatory response is sensed by at least one sensor (15; 16) and used by a downstream evaluation unit (10) as a basis for calculating the current damping constant of the pipe (9) and comparing this with a stored, original damping constant of the pipe (9) when it was new.

8. The method as claimed in claim 7, characterized in that a mass flow is taking place when the single oscillatory pulse is imparted to the pipe (9) by the excitation unit (8), but this is computationally eliminated by the evaluation unit (10) to determine the individual damping constant of the pipe (9).

9. The Coriolis mass flowmeter as claimed in claim 7, characterized in that a mass flow is not taking place when the single oscillatory pulse is imparted to the pipe (9) by the excitation unit (8).